$1.50

PORTLAND ATARI CLUB

MARCH 1986

Next General Meeting

Monday, March 3, 1986 at 6:30 PM

BPA Auditorium, NE 9th and Holladay

PAC Bulletin Board Systems

24 Hours - Every Day

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Portland Atari Club

PORTLAND ATARI CLUB

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Commercial Advertising rates are; full page (7 X 9 1/2) - $50, half page (7 X 4 1/2) - $25, quarter page (3 1/4 X 4 1/2)- $15. Ads must be prepaid and a 1/3 discount is given for 3 consecutive ads. The copy may vary in content, but the space must be the same in each issue. Send camera ready copy and check payable to PAC at the address below. Contact the Editor for other arrangements. Ad deadline is the 5th of the month prior to publication.

Membership is $20 per year and includes a subscription to this newsletter and access to members only functions. Single copy price of the newsletter is $1.50. General meetings are open to the public and start at 6:30 PM on the 1st Mon. of each month (2nd Mon. in the case of holidays) on the date and at the location listed on the cover of this newsletter.

Exchange newsletters, articles, correspondence and ads should be sent to the following address:
Portland Atari Club, Attention: (appropriate board member), P.O. Box 1692, Beaverton, OR 97005

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President's Column
Vern Vertrees

Well, another month has gone by and I'm pushing a deadline to get this article in the newsletter. Time sure flies when your having fun. How many of you have found that the clock speeds up when you sit down at your computer? I have spent at least an hour looking for that hidden wire that connects the clock to mine but I still haven't a clue how that works.

Getting back to the subject at hand, for those of you who missed our last meeting, you missed a great demonstration. We had the pleasure of having Cal Scott demonstrate his two synthesizers and a electronic drum connected to his 130XE via the MIDI interface. You talk about great sounds -- even the frogs, cats, and dogs sounded good. We will be sure and have him back again. By the way, he will have his first record released soon. We will keep you informed.

I want to also thank Jim Cady for giving us the latest information from Atari and from CES. I know he would have liked to have had more answers for you as to Atari's new marketing policies, but at this point in time no one outside of Atari seems to have those answers. Just a lot of rumors floating around. Chuck Hall has been in contact with Atari and is compiling a letter to them. They have asked for our opinions on several subjects, so if you will contact Chuck I'm sure he will include your opinion along with others who have responded. You can leave your message on PAC 1 or 2 or IBBS (Attention Chuck Hall), or if you have no modem I'm sure he will take your voice call. This is your chance to get your feelings to Atari.

We also got a good look at a super computer that belongs to Erney Negus. This is a 130XE (or at least it was). It still looks like one, except for the row of red LED lights and the extra switches along the back and the extra ports at one end. Well, as we found out at the meeting, it sure doesn't run stock. It has one meg of RAM and built-in everything, including battery power. As soon as I can get Erney to sit down long enough to find out a little more about him and his computers, I will do a full review on him and his systems.

As of this last meeting with all of the renewals coming in we have reached a new record in memberships. At last count we had 575 family memberships and we are still growing! WOW! I think that's great!

We had a questionnaire for all of you to fill out but in the last minute rush to get to the meeting they got left behind. We will try to get them in the newsletter and also have them at the next meeting. It is very important for us to get this information from you if we are to get our new special interest groups (SIGs) organized. Please fill them out and get them to us at the March 3 meeting or drop them off at IB Computers.

I understand that Tom Brown had a good turnout for the new business SIG meeting. I'm sure we'll hear more about that from him.

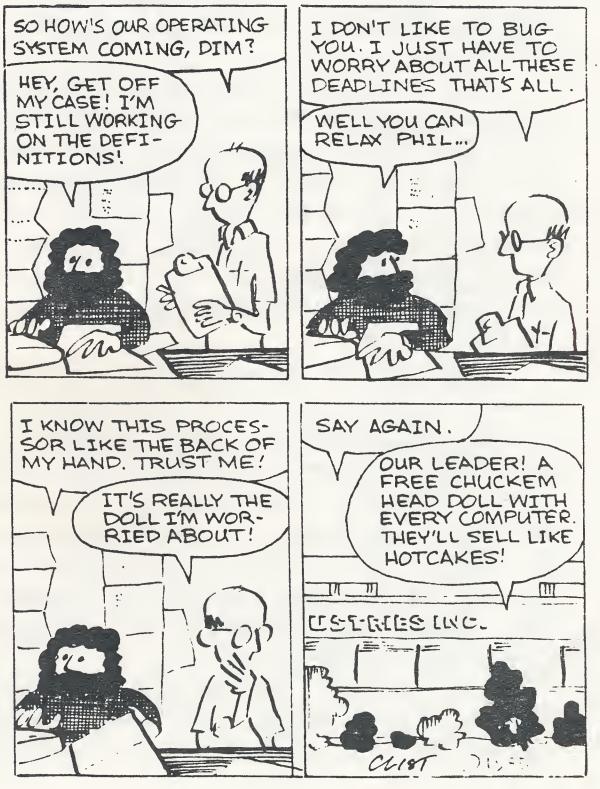
I don't know what Jim Berry has in store for us at the next PAC meeting, but I'm sure it will be good.

I have been in contact with Stephen D. Lawrow, the person who wrote BASIC XL, and MAC/65 for the Atari computer. He has now moved to Bend, Oregon, and is writing a new utility program for the ST. This utility is about to be released by OSS. Steve attended our ST SIG meeting on February 13th and demonstrated his Disk Kit and taught us some useful information about ST diskette format. He has also committed to coming to our general meeting to talk to all of us, but the date has not yet been set. We will keep you informed as to when he will be able to make it. Welcome to Oregon, Steve.

If any of you have anything that you would like to share with us at our meetings, please let me or Jim Berry know about it. We would like to show off some of our local talent.

I'm sorry we didn't have enough time for Jerry Anderson to show some of the new club disks, but I promise him time at the next meeting. It sounds like he has some great new programs for us.

I hope to see you all at the meeting.



Editorial
R. DeLoy Graham

I recently attended a three-day workshop and conference in Seattle, Washington, sponsored by the Northwest Council for Computers in Education. This was the NCCE's 15th annual conference, meaning that its first conference was held five or six years before the first microcomputers. The theme of the conference was "Computers in Education: Roads Less Traveled." It is interesting that after 15 years computer education is still a road less traveled.

1,273 participants took part in 56 sessions and visited with 48 exhibitors. Session after session demonstrated software and applications for the Apple II line of computers, with a sprinkling of IBM PC and Macintosh programs. Atari was not represented at all. Talk about roads less traveled! Even more interesting, neither the Atari 520ST nor the Amiga were mentioned at all. Quite frankly, I was disappointed. With the power of the 520ST at less than the cost of an Apple IIE, why is it being ignored? Is it lack of software? I don't think so. The ST already has available for it the software most used in schools. It has several word processors, a very powerful spreadsheet, two or three database programs, and several good languages, including those popular in computer education: Pascal, Modula-2, Logo, and C. The cost of most of these is less than comparable products on the Apple, and they are much more powerful because of the Motorola 68000 chip and the extended memory found in the ST. So what is the problem?

Apple managed to see early on that making deals to low-salaried teachers would pay off for them in the long run. Once the teachers had Apples in their homes, they would push to keep Apples in the schools, they reasoned. Furthermore, students would become acquainted with Apple computers in serious surroundings and, when offered special deals, guess what they would buy! Consequently, most computer education curriculum has grown up around the Apple computer.

I can't help but believe that Atari executives must do more to get their machines into the schools if they are to be successful. Arthur Leyenberger spoke insightfully in February's A.N.A.L.O.G. magazine when he wrote, "I think Atari Corp. had better start considering how they're perceived by the non-Atari-using public. The people who are unfamiliar with what Atari computers are and the people who think Atari is synonymous with 'game machine' are those who will make or break Atari." I agree with him completely.

As an educator, I hear few positive comments about Atari from my colleagues. And guess what kind of computers they have at home? Trying to convince people unfamiliar with Atari computers to even consider their use in school is like trying to convince a mother in the United States that she should be speaking and teaching Russian at home. To most, no arguments are worth considering, least of all the difference in cost and power. I can understand some of their caution, but the power of the new 16-bit computers to provide educational experiences beyond our present imagination as well as more powerful environments for the teaching of programming and computer science seems to me to merit at least a casual examination. But nooooooooo!

Of more concern, some think that the new technology will eventually bring about the demise of the popular 8-bit computers. Leyenberger reported, "Most publishers I talk with tell me that the 8-bit market--Atari, Commodore and even Apple--is dead." Whether we agree or not with these publishers, we need to consider whether schools should continue investing in a technology that has been surpassed for several years.

I would rather use my Atari 800 than an Apple anytime. And now, with my Atari 520ST, I get sick at the thought of restricting my computing world to the Apple. Fortunately, at Beaverton High School we use an MC68000-based Alpha Micro Computer System to teach programming. Regretfully, however, we have no graphics available to us on our system. How I would love to have a roomful of Atari 520ST's! Just today, however, twelve new Apple IIe's arrived at our school for use in business classes. And the computer applications teachers are asking for a classroom set of Apples for their use. Our district will not even consider Atari computers, so I have no grounds to argue for them.

As Atari Enthusiasts, we need to spread the word. But that is not enough. Atari Corporation, you've got to capture the school market if you are going to succeed. Otherwise, your products will find homes only among computer hobbyists and others who are not swayed by prestige. I admire your current efforts to bring computer power to the people, but please don't let business and money become your most important goals. Continue to provide a service and a powerful product and the rewards will follow.

****

You will notice a few changes in March's PAC Newsletter. We are trying out a dot matrix printer in place of Clyde Pritchard's letter quality printer. We all feel that Clyde's printer has been used enough by PAC. We are still looking for a printer for the newsletter and need to know what your feelings are about using dot matrix.

Board Meeting Notes
Dan Gibson

The January board meeting was held at 7 PM on January 22nd at IB Computers. Attending were the following: Chuck and Jean Hall, Dave Holliday, Dan Gibson, Tom Brown, Jim Miller, Jim Berry, Steve and Debbie Billings, Russell Schwartz, Tom Addis, Mike Smith, Elanna Schlichting, Jerry Anderson, DeLoy Graham, and Vern Vertries.

FEBRUARY MEETING

The February general meeting will begin at 6:30 with PAC software sales until 7:00 to 7:15 when the main meeting will start. Jim Cadie of the Moore Company will give a brief summary of the Winter CES. He will also update us on what he has heard about Atari Corp. (Jim reports that the 65XE will replace the 800XL, sell for $99.95 and be available March 15th. Star Raiders II is coming soon. A new 2600 Jr. about 1/3 the size of the original 2600 will also be out in mid-March along with the 7800 machine. They will sell for $49.95 and $69.95 respectfully. TOS on ROM is here in limited supply. You will be able to buy a 130XE, 1050 drive, 1027 printer, and a group of software for $399.95. There appears to be no program in place for service on mass marketed ST's.)

Next, the SIG groups will have time to speak. Three new PAC disks will be available at the meeting: Hardware I, Copy 130XE by Ernie Negus, and a new game disk from England called Friday Fun. Door prizes will again be given out in a drawing. The main feature of the meeting will be Cal Scott of Cal Scott Music. Cal will demonstrate MIDI Track III on a 130XE and 1050 drive along with a couple of keyboards and MIDI interface.

MISCELLANEOUS

At this Board Meeting we discussed the possibility of reducing the renewal rates of the club. Even though the club is financially well off at the present, it was felt that reducing the rates would not be in the best interest of the club. The $20 fee just about covers the cost of the newsletter and BBS systems. There are also a number of hardware expenditures on the horizon. We voted to give Steve Billings a box of 3 1/2 inch disks in lieu of the PAC disk library he won at the last meeting. We also voted to let the Explorer SIG use the 64k 400 computer and will consider the purchase of a 1050 drive in the future.

TREASURER'S REPORT

As of this writing, the balance in our checking account stands at $3,123. At the last meeting software sales totaled $160 and $760 for memberships.

Membership Notes
Jim Miller

This month has been a real eye opener for me. There are a lot of you out there and it is a big job to keep track of you alls!

I check the mailbox each week for new memberships or renewals, you will receive your cards with the newsletter for the next month. If I receive your dues after the newsletter is mailed, you may pick your cards up at the monthly meeting. If you do not come to the meeting (Shame, shame! We miss you when you're not there.), I will mail your card to you after the meeting.

We are up to 560 memberships. I was so busy receiving memberships at the meeting, could someone please tell me what happened at the meeting? If this persists, I guess I will attach a tape recorder to the podium so I can listen to the meeting when I get home.

I would like you all to welcome the following new members:

LYLE ADAMS	GEORGE HOWARD
CHRIS BABCOCK	KENNETH HOWARD
BILL BAILEY	JIM JUNOR
TIMOTHY BARTON	ARON KRUEGER
ERIC BJORKLAND	SANDY LUEDERS
CHRISTOPHER BSARDALL	LEO MOCK
HARRY BURKET	TED NASHIF
C.P. CARPENTER	TED NELSON
JOHN CHAPMAN	PETER NICHOLLS
DALE CHRISTIANSEN	LES NUCKOLS
ARCHIE CONWAY	DONALD PETERSON
NORMAN DODGE	PERRY REEL
DAVID DUNBAR	JIM REILLY
FLOYD FANNING	RICHARD RICKAMN
FERNWOOD MIDDLE SCHOOL	MARCIA RINEHART
ROBERT FREYTAG	ERIC ROSS
WILLIAM GAMMON	TONY ROTH
HAPDEC ENTERPRISES	GEORGE RUSSEL
JAMAL HARVEY	MOHAMED SABA
ROBERT HALE	PATRICK SCHENK
RICK HERBERT	JOE SCHULTZ
ED HILTENBRANDT	THOMAS SMITH
CARL HOVEY	DENNIS SPITZE
RICHARD STRAYER	DENNIS SUNBERG
DONALD SWAFFORD	DON TILTON
GUY TOWNSEND	JOHN VAN DOLAH
DON WACHLIN	BARRY WILSON
CRAIG WINDHAM	WAYNE WYLER

We also would like to welcome their family members. Please check with me at the meeting if the spelling is wrong or if you do not receive your newsletter, and we will make any necessary corrections. Thank you for your patience during my first month of delirium tremors.

PAC Help Hotlines

The following people have generously offered to take telephone queries in the areas indicated.

Adventure Games	Russell Schwartz	646-6418
Assembly Language	Leroy Baxter	653-1633
BASIC Programming	Nick Yost	981-0838
	Lee Gassaway	642-2455
BBS Usage	Steve Billings	246-1751
	Don Adams	245-7168
	Russell Schwartz	646-6418
C	Randal Schwartz	643-1089
Cassette Operation	Lee Gassaway	642-2455
DOS Operations	Gary Lippert	233-7069
FORTH Programming	Ron Chaffer	283-5691
	Ricky Wooldridge	224-7163
Hardware Operation	Gary Lippert	233-7069
Modem Operations	Gary Lippert	233-7069
Operating System	Nick Yost	981-0838
	Leroy Baxter	653-1633

Explorer's SIG
Wayne Winterbottom

The Explorer's group would like to thank Elanna Schlichting for her time and support for the last year in keeping the Explorer's SIG a vital part of the Portland Atari Club.

We now have a permanent location to meet. The new location is as follows:

Fulton Park Community Center
68 S.W. Miles
Portland Oregon
244-8449

At the first meeting in January, Ron Chaffer demonstrated a word processing package called PAPER CLIP, which is one of the newest for the ATARI. It looks like a good program. Thank's to Ron we now know more about PAPER CLIP'S capabilities. At the second meeting, Elanna showed the group how to enter data into the program SYNFILE+. SYNFILE+ is a excellent data base. We were shown many of its features.

We welcome all to join with us Exploring the world of ATARI.

Special Interest Groups
Thomas Brown

BUSINESS APPLICATIONS SIG

The Business SIG met at Beaverton High on Wednesday, February 5th, to reorganize the group. We had a good turnout. I'm happy to report that the group has decided to support both 8 and 16 bit computers. By the show of interest, I think the group will be evenly split between the two systems. The group will be looking at word processing applications as a first project. For those of you who missed the meeting and would like to join in the fun of Business Applications, here are the meeting times, dates and place:

Dates: 1st & 3rd Wednesday
Time/Place: 7:00 PM / Beaverton HS, Room 129
Leader: Tom Brown
Phone: 644-6674 or 646-5237

ST SIG

Dates: 2nd & 4th Thursday
Time/Place: 7:00 PM / Tektronix, Bldg 50
Leader: Pat Warnshuis
Phone: 246-3724

MODEM & COMMUNICATIONS SIG

Dates: 2nd & 4th Monday
Time/Place: 7:00 PM / Call
Leader: Jerry Anderson
Phone: 655-3914

EXPLORER'S SIG

Dates: 2nd & 3rd Tuesday
Time/Place: 7:00 PM / Call
Leaders: Tom Comerford 246-4694
Wayne Winterbottom 669-1367

ASSEMBLER SIG

No meeting this month. Because the interest in this group has declined, we will poll the membership to see if this group can be revived. I would hate to see this SIG go away.

Leader: Clyde Pritchard
Phone: 648-0461

NEWSLETTER SIG

Date: March 5, 1986
Time/Place: 7:00 PM / Call
Leader: R. DeLoy Graham
Phone: 649-6993
Article due date for April's newsletter: March 8
We would like to receive articles for the next month's issue at the monthly PAC meeting. See inside front cover for submission suggestions.

For information on SIG activities, call SIG leaders or Tom Brown (646-6674 or 646-5237). We are here to serve.

The Learning Phone - PLATO Homelink Review

Clyde Pritchard

For those of you who have been waiting for this software since you first saw the wonderful article about it in the July 1984 issue of ANTIC Magazine, your wait is finally over, well almost. I say almost over, because once you buy your Learning Phone (LP) software package, you still have to wait about a week to get your PLATO access codes. There is a mail-in card in the package, which gives you a free 1 year subscription to the PLATO Homelink service, and 1 hour of connect time. The LP software package costs $29.95, and includes a manual that describes how to use the LP software, and the basics of the PLATO system. The cost of a 1 year subscription is currently $25.00, and connect time is currently $7.75 per hour. There is no long distance phone charge if you live within the local calling area of one of the PLATO access numbers. In our area, there are currently local access numbers in Portland (300/1200 baud), Eugene (300 baud), Seattle (300/1200), Tacoma (300) and Richland (300/1200). The list of numbers that came with the LP software showed a number for Salem, but the list I received with my access codes did not have it.

The LP software emulates a special PLATO terminal in order to allow your 8-bit Atari computer to access the interactive games and Computer Based Education courses available on the PLATO system. The Homelink subscription gives you access to 450 of these programs, as well as electronic mail, text processing, and several other features of the PLATO system during week night and weekend hours. A full subscription to the PLATO system is also available at higher cost. It gives you unlimited hours of access to the system, and a larger selection of courses. A possible problem in terms of subscribing to the PLATO system is that you must have a major credit card to have your access charges billed to.

A regular PLATO terminal displays 64 characters per line and 32 lines of text, and uses a 512 by 512 dot matrix to do this and display very detailed graphics. This high resolution display has been reduced to fit graphics mode 8, which has a resolution of 320 by 192. The LP software has a zoom feature that allows you to view the displays a full 512 by 512 resolution. You see about one-third of the display on your screen, and scroll to the section that you want to see using a joystick. This feature works quite well, and text characters are about normal Atari size (or a little larger) in zoom mode. To really see the detail in many of the graphic displays, the zoom feature is a must. You must have a 48K system to use the zoom feature.

The only other hardware requirements for accessing the PLATO system are a phone and a modem. The LP software is supposed to work with all Atari modems, and all modems that use the 850 interface. I saw messages on CompuServ that indicated that it would not work with the XM301 and the ATR-8000. The manual says that the XM301 will work, so I'm not sure what the story is there. The ATR-8000 problem may be real, and caused by the fact that it uses a disk based 850 interface device driver. The LP software does not use a disk drive. A printer is optional.

The PLATO system does not generate color displays, but the LP software allows you to change the screen colors to your personal preference. I have been using a color monitor, but a monochrome monitor might make the the displays easier to view. Those people who use the various 80 column emulators on their systems will probably adapt to the smaller character size more easily than those of us who have been in 40 column mode for several years. I was unable to try it, but display quality on a TV set may be poor.

For a more detailed description of the LP software and the PLATO system, read the article in the July 1984 issue of ANTIC magazine. Also, keep your eyes out for new articles. I hope to see some new coverage now that the LP software is available.

What good is access to the PLATO system? Well, that depends on what you want. If you want access to hundreds of Computer Based Education courses for yourself or your children, or if you want access to several interactive, multi-user games, then PLATO has something to offer you. If you want to have access to programs that you can download and run on your Atari, PLATO is not what you want; stick with CompuServ and the public BBS's.

Why can't you download the programs from the PLATO system and run them on your Atari? Well, it's not because the LP software doesn't use a disk drive. It is because the programs on the PLATO system are for the mainframe computer system that they run on, not for micro computers; not even the mighty 520ST. The PLATO system uses special programming languages and a very intricate operating system to make what it does possible. It will be at least a few more years before a home system can do what the PLATO system has been doing for years.

I have only spent about six hours on the PLATO system so far, but I have had a lot of fun trying out various programs. PLATO has programs for young children (ages 4-7) all the way up to college level courses. Categories include astronomy, aviation, biology, business, chemistry, computer science, consumer credit, games, general interest, languages and mathematics. The interactive nature of the programs makes them fun to use, and enhances the learning process. The graphic displays

(continued on page 9)

BackTalk Terminal Program Review

Clyde Pritchard

BackTalk is a terminal program for 8-bit Atari computers. It is not a public domain program, but is a copyrighted program written by Steve Ahlstrom, Dan Moore and Don Curtis. Hopefully these names are familiar to some of you, because they are the programmers that wrote PaperClip and SynFile+. The program is marketed by ANTIC Magazine in the APX (Atari Program Exchange) Classics section of the ANTIC Catalog for $19.95, and is available at local dealers that stock items from the ANTIC Catalog. IB Computers supplied me with a copy of BackTalk to do this review.

BackTalk (BT) is supplied as an autorun object file on a single density disk with DOS 2.5. The documentation is provided on the back side of the disk, with an autorun program that will display or print it. You can also load the documentation files into a word processor and format them to fit your needs. You can make backup copies of the disk.

BT has the following features: macro commands and libraries, 300/1200/2400 baud operation, ASCII, ATARI (ATASCII), or TEXT (special mode for ASCII XMODEM transfers) translation modes, half or full duplex operation, XMODEM (with AMODEM and CompuServ support) file transfers, buffer upload or download (capture), and some DOS functions; directory list (1-8), file delete, file copy, and format disk. It supports the 130XE RamDisk under DOS 2.5 and other DOS's that allow use of the RamDisk. It also supports the Axlon RamDisk in an 800. BT will run under most DOS's available for the Atari, giving support for single, enhanced or double density drives.

BT will work with any modem that uses the Atari 850 Interface, and the Atari 835, 1030 or XM301 modems. It has the device handler code for each of these devices, and determines your configuration when it loads. The documentation does not discuss the use of non-Atari modems, like the MPP/Supra modems, or other devices that do not use Atari's "standard" telecommunication methods.

BT has two modes of operation, terminal mode and command mode. Terminal mode is the normal operating mode for communicating with other systems, and command mode is used to set communication options, set-up to send and receive files, and to do disk and file utility functions. Terminal mode does have some keyboard commands, which are executed by using a control/shift plus a key combination. These commands allow you to toggle word wrap on and off, toggle fine scrolling on and off, toggle a text input window on and off, reset the upload buffer back to the beginning, execute macro commands, load a new set of macro commands, display and edit macro commands, or take a "snapshot" of the terminal screen display.

The macro facility of BT, called the Macro Command Language (MCL), is probably its most powerful feature. A simple macro will do something like send your user id or password to a BBS, and a complex macro will autodial the system you want to connect to, and go through the complete logon procedure. In both cases, you only have to use a single keystroke combination to cause BT to to all of the work for you. More complex macros can be set-up to do even more things automatically. Using the MCL takes some work, because it is a small (24 commands) programming language. You have up to 15 macros available in memory at a time, and each macro can have up to 80 characters of commands. A macro can branch to another macro, even one in a new macro library with 15 more macro commands. The first 10 macros are executed from the keyboard, and the last 5 are executed with the joystick. Over half of the documentation is devoted to the MCL, but some of the commands and examples could be explained in more detail.

I would like to discuss the MCL and the other features of BT in more detail, but that would take more room than was budgeted for this review. If you are using BT and need some help, leave me a message on one of the PAC BBS's and I will try to help. I would also like to talk about the use of commercial versus public domain terminal programs, but that will have to be in a future issue.

The only problem that I have had with BT is with true XMODEM sends to the PAC FoReM XE-based BBS's. The first block of the file is not sent in this mode, but it works fine if you choose the AMODEM mode under the XSEND function of BT. BT could also use better documentation, especially for users who are new to terminal programs.

BackTalk is a good program, is worth more than $19.95, and has many nice features. There are also many public domain programs with similar and sometimes even more nice features. This is just like trying to pick and stick with only one word processor, it's a hard choice.

Mailing Label Program Additions
Lee Gassaway

In the December issue of PAC Newsletter, I gave a listing of the program to create multiple labels. As promised there, I will now proceed to modify and add to the program so that we can load and save different lists that we create.

The criteria for what I wanted to accomplish was:

1) to be able to use one master program (i.e. MAILMAST.PGM) to access all lists I create;
2) to be able to load, modify, and save the lists;
3) to do the above letting the computer do the work! (After I finally WORK out the BUGS!)

The way I chose to attack the task was to have the computer 'LIST' and 'ENTER' the mailing label lists. To do this the computer has to know what, how big, and where the list is.

The original program stored the list in DATA statements starting with line number 10000. The last DATA statement was 29999. This is fine if the program is saved with the list. However, if you have different lists and you 'ENTER' a smaller one over a larger one, the bulk of the larger one still exists in memory and so the END OF FILE is in the wrong place. The modification will cause the computer to move the end of list DATA statement to the appropriate spot for each list as you create/ modify each list.

In order to keep track of things, we need to know how many records there are (NUMRECORDS) and what record we are at (RECORDNUM). If we save the number of records in a DATA statement ('9999 DATA [NUMRECORDS]'). Knowing that the last DATA statement for the list will be at 10000 + 10 * NUMRECORDS (because I designed it to be that way), all we have to do is get the computer to 'LIST' to diskette or cassette line numbers 9999, 10000 + 10 * NUMRECORDS.

Once we have lists on disk or cassette, we simply have to 'ENTER' them back into memory.

The lines 20, 30, 40, 1010, 1055, 1070, 1072, 2000, 5025, and 5027 do all the record keeping changes.

Lines 3010 to 3060 are original lines 3000 to 3050 renumbered to allow addition of new lines 3000 and 3005. These lines allow you to select if you want to save only the list or the program plus the list together. The choice is yours.

Lines 4000 to 4180 accomplish the selection of the LISTing and the ENTERing by utilizing the Automatic RETURN mode. I have left some of the print loops and screen on in the program so you can watch how some of the functions work.

Lines 4200 to 4270 accomplish the saving of the record list.

In this program I have used a few different ways to position the cursor (lines 20, 30, 100, and 4225 are examples). You may have noticed that I have some TRAP statements but no TRAP 40000. You do not need to undo a TRAP before you reset it. Just set it where you want the program to go if an ERROR is encountered. Follow through: line 4040 sets TRAP 4060, line 4060 resets TRAP 4100, line 4100 resets TRAP 1000. So if you try to crash the program, it just jumps to a safe point and goes on or asks us to try again.

I would appreciate your comments and suggestions. Call me at 591-5252 during the day, or at 642-2455 in the evening. These are Aloha, Oregon, numbers.

(Editor's note: Lee's program is listed on page 20.)

****

A few months ago, Nour Abdullah Al-Rasheed of Hofuf, Al-Hassa, Saudi Arabia, asked the editor of COMPUTE! how to change the movement of the cursor so that he could type from right to left instead of left to right. Following is a short solution to this problem:

```
0   REM S."D1:REVERSE.DIR"
1   REM by Lee V. Gassaway
2   REM 1660 SW 196th
3   REM Aloha, OR 97006 U.S.A.
4   REM 12/1/85
5   REM REVERSE SCREEN DIRECTION INPUT ROUTINE
10  OPEN #1,4,0,"K:" : OPEN #2,8,0,"E:"
20  REM A=PEEK(85) => CURRENT CURSOR POSITION
100 B=38 : A=B : GOTO 140 : REM SET CURSOR TO RIGHT SIDE
    OF SCREEN LEAVING ONE SPACE MARGIN
110 GET #1,X : IF (X>27 AND X<
    THEN PUT #2,X : A=PEEK(85) : GOTO 110 : REM CATCH
    CONTROL CODES
120 A=A-1 : IF X=155 OR X=125 OR X=255 THEN A=B
121 REM DIMINISH POSITION BY ONE; IF 'RETURN' OR 'CL
OR 'INSERT' THEN SET CURSOR TO RIGHT SIDE
130 PUT #2,X : IF A<2 THEN A=B : X=155 : PUT #2,X : REM
PUT CHARACTER ON SCREEN; IF NEXT POSITION BEYOND LEFT
MARGIN THEN LINE FEED AND SET CURSOR TO RIGHT SIDE
140 POKE 85,A : PRINT CHR$(31); CHR$(30); : REM POSITION
    CURSOR AT NEXT POSITION
```

(Editor's note: The original problem was printed in the December 1985 issue of COMPUTE! on page 12.)

Assembly Language Course
Lesson Five: Index Registers & Looping
Chris Crawford - ANTIC

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We are now going to expand the model of the 6502 that you have been using. Until now, the 6502 I have described had nothing more than a status register, program counter, and accumulator. Now I am going to reveal the existence of two new registers in the 6502: the X- and Y-registers.

These two registers are eight-bit registers just like the accumulator. You can load numbers into them and store them out just as you can with the accumulator. You cannot do arithmetic or Boolean operations with them as you can with the accumulator. But you can do a number of very special things that greatly increase the power of the 6502.

Let's start with the simple move instructions. The first are LDX and LDY, which load the X- and Y-registers the same way that LDA loads the accumulator. Then there are STX and STY, which store the X- and Y-registers the same way that STA stores the accumulator. There are also four commands for transferring bytes between registers; these are TAX (transfer A to X), TAY (transfer A to Y), TXA (transfer X to A), and TYA (transfer Y to A).

Then there are four special instructions that you will use very often. These are INX and INY, which increment (add one to) the X- and Y-registers, and DEX and DEY, which decrement (subtract one from) the X-and Y-registers. Finally, we have the CPX and CPY commands, which compare X or Y with the operand of the instruction. These two instructions operate in exactly the same way that the CMP instruction works, except that they use the X- and Y-registers instead of the accumulator.

What are these two registers used for? Well, they are sometimes used as temporary registers. If you are in the middle of a lengthy computation, and you need to save a value currently in the accumulator to make room for something else, the X- and Y-registers are a handy place to stuff values away for temporary storage. Programmers do this all the time.

However, temporary storage is not the real purpose, and value arises from their utility as index registers. Index registers go hand in hand with loops; the best way to show you how they are used is to dump the whole schmeer at once and then explain it.

So consider the following problem: your program has to deal with the possibility of user errors. Suppose you require the user to type in a file name for your program to read. What happens if this file is not on the disk? You have to put an error message on the screen that says, "FILE NOT ON DISK!" How do you print the message? Here's a sample bit of code that will do it:

```
        LDX    #(ENDMSG-ERRMSG-1)
LOOP1   LDA    ERRMSG,X
        STA    SCREEN,X
        SEC
        SBC    #$20
        DEX
        BPL    LOOP1
        JMP    ELSWHR
ERRMSG  DB     "FILE NOT ON DISK!"
ENDMSG  DS     1
```

Let's take apart this code and explain it step by step. First thing we do is load the X-register with the number of characters (minus one) in the message. The expression (ENDMSG-ERRMSG-1) will calculate that length at assembly time. This turns out to be 17 characters long. If we were pedestrian about it we could have just written LDX #16, but this way, if we decide to change the message we don't have to remember to go back and change the LDX command. Neat, huh?

Okay, so now we have a 16 in the X-register. Now the 6502 comes to the next command -- LDA ERRMSG,X. This command tells it to load the accumulator with the byte at (address ERRMSG, indexed by X). What this means is as follows: the 6502 will take the address ERRMSG and add the value of the X-register to that address. It will then go to the address so calculated and load the accumulator with the contents of that address. Since X contains a 1, the 6502 will go to the 16th byte after the first byte in the table ERRMSG. If you count characters, you will see that the 16th byte is the exclamation point. So the 6502 will load the ASCII code for an exclamation point into the accumulator.

The next two instructions (SEC, SBC #$20) are necessary to correct for the Atari's non-standard handling of ASCII codes. They make sure that the exclamation will be printed on the screen as an exclamation point.

The next instruction (STA SCREEN,X) stores the results indexed by X. the 6502 will add the contents of X (still 16) to the address SCREEN. It will then store the contents of the accumulator into that address. If that address is part of screen RAM, then you will see an exclamation point appear on the screen.

The next instruction that the 6502 encounters is the DEX instruction, which subtracts one from the X-register.

Next, the 6502 comes to the instruction BPL LOOP1. This will branch if the N-flag is clear. The value of the N-flag is affected by a DEX instruction. The value of bit #7 of the result is transferred to the N-flag. Bit #7 of 15 is a zero, hence the N-flag is clear, hence the 6502 will indeed take the branch. Note that it branches back up to LOOP1.

Now it will repeat the process, only this time X contains a 15, not a 16. It will therefore grab the 15th character, an ASCII 'K', and store that to the screen position just before the exclamation point. Then it will subtract one from X to get a 14, and will continue the loop.

This process will continue, with the 6502 grabbing bytes in reverse order from the table and storing them onto the screen, until after the 6502 does the zeroth byte. When X contains a zero, and the 6502 executes a DEX, it contains the result $FF. This sets the N-flag. When the 6502 encounters the BPL command, it will NOT take the branch; instead, it will skip the branch and go on to the JMP statement. The loop is terminated.

In this one fragment of code you have seen two major ideas: indexed addressing and looping. They are so closely related that it is hard to talk about one without the other.

You can use indexed addressing with either the X-register or the Y-register. You must commonly use indexed addressing with the LDA and STA commands, but you can also use it with many of the other 6502 commands: ADC, SBC, CMP, AND, ORA, EOR, LSR, ROR, ASL, and ROL can all be used with indexed addressing. Indexed addressing allows you to work with tables or arrays of data.

There is only one catch: all of your arrays must be less than 257 bytes long, because the index registers are only eight bits wide. Most of the time this is not a serious problem. However, if you must address a larger table or array, you can use indirect addressing. To do this, you calculate the address that you desire to access, store that address in two contiguous bytes on page zero (low, then high) -- we call these two bytes a pointer -- and then refer to the pointer like so:

```
LDA (POINTER),Y
```

This instruction will take the address out of the pointer, add the value of Y to it, and load the accumulator with the contents of the address so calculated. If POINTER contains $4567 and Y contains a 2, then the 6502 will load the accumulator with the contents of address #4569. You are still restricted by the size of Y, but you can always go back and change the POINTER if you need to span longer arrays. In this case, you frequently just leave Y equal to zero and do all of your indexing directly with changes to POINTER.

The last topic I will take up is termination techniques. Every loop must somehow be terminated if you are to avoid the problem of the Sorcerer's Apprentice. You will note that the programming example I gave used a rather odd approach. I started at the end of the array and worked backwards. Why not start at the beginning and work forwards? It's slightly more efficient going backwards than forwards. When you go forwards, you have to terminate the loop with:

```
INX
CPX  #17
BNE  LOOP1
```

Whereas, when you go backwards, you need only use:

```
DEX
BPL  LOOP1
```

Going backwards you save one instruction. However, if this confuses you, feel free to count forward; that works, too, only it's a little less efficient.

There are lots of other sneaky ways to terminate loops, but they fall into advanced topics.

****

THE LEARNING PHONE (continued from page 5)

are not just detailed -- in many cases they are animated, which is really impressive, especially at 1200 baud.

That brings up another hardware consideration. PLATO really works much better at 1200 baud than it does at 300 baud. This is especially true when you are using a program with an animated graphic display. PLATO transmits a lot of data to the LP software in order to generate the displays, and the fact that 1200 baud is 4 times faster than 300 baud makes a very big difference. By the way, there is no additional charge for 1200 baud access.

I really have to spend more time on the system to give you a more detailed view of its benefits. It does appear to have benefits in terms of the educational programs that it offers, and that these benefits could be greater than the expenses required to use the system, as long as connect time is used effectively. Just as many CompuServ users have found out, you really need to have a defined budget that limits your usage, or you will have a big bill to pay at the end of the month.

The best way to evaluate the possible benefits of the PLATO system is to see it work. If you know someone who has access to the PLATO system, I recommend that you ask them to give you a demo. I hope that the club can come up with a way to demonstrate the system to you, and I have come up with a couple of ideas on how to do so. I will be discussing them with Vern and the other board members to see if we can get something worked out.

Disk Error Troubleshooting
Bill Petry

Reprinted from R.A.G. BAG, Volume 2, Issue 4, Sep. 1985.

(Editor's Note: Use this information with care or you may find yourself doing more harm than good!)

Many disk related problems can be readily addressed by rechecking what you thought you checked or what you took for granted as being already done.

One of the worst culprits is leaving your diskettes in the drive when you power-up or turn the drive off. Always start up your drive before inserting your diskettes. Always!! Always remove your diskettes before shutting down your system. It takes but one careless act to garble a sector header, checksum or worst of all the sector data itself. Checksums can be rewritten. Damaged sector headers are lost. Errored data are useless.

Another major source of grief is the much used write-protect bypass switch. Be very careful with these, especially when used with HAPPY or ARCHIVER enhancements. Sometimes the program (even though it is on the original disk) checks for normal load times, etc., and since the drive won't behave normally the program will think it's a copy and can really play all sorts of interesting havoc. Some programs have self-destruct subroutines built-in which will format the program disk when it senses anything out of the ordinary. All you'll hear is the familiar clunk, clunk, clunk ... but never quite soon enough to catch it in time.

If your trouble is with a copied disk you may have to make another copy from your original with a more sophisticated drive enhancement.

Tools of the Trade

Name	Author(Mfg)	Read Errored Sectors?
The Archiver	(Spartan Software, ICD)	Yes
Diskey	Sparky Starks	Yes
Diskscan	David Young	No
Diskwiz II	Jerry Allen	Yes
Disk Doctor II	Steve Kaufman	No(Yes)
Disktool	Tony Messina (Analog)	No
Disk Wizard II	(C.A.P. Software)	No
Scanalyzer	(Alpha Systems)	Yes
Sherlock	(4th Works)	No

The above listed disk utilities are rated only on their ability to read Cyclical Redundancy Checksums (CRC) and Bad Data Marked sectors. This ability is necessary to recover potentially useable data. My personal preference is Steve Kaufman's Disk Doctor II. It is written in BASIC and is listable so you can easily alter it to suit your needs. My copy is able to read errored sectors as well as print the disk directory.

Diskette Recovery

Before you get too excited or overwrought, take the time to go over the following five startup reminders. When you are sure that these are all in order proceed to number 1 and work your way through to your solution.

STARTUP Reminders

** Does program require BASIC?	Insert BASIC.
** Does program require printer on?	Turn on printer.
** OMNIMON present?	Turn OMNIMON off.
** If ARCHIVER present is it on?	Turn off ARCHIVER.

Disk Error Solution Key

1a Message on screen 'ZAPPO' or 'BIG BROTHER IS WATCHING YOU' etc. Check STARTUP reminders then goto 14.
1b 'BOOT ERROR' on screen. Goto 10.
1c Not 'BOOT ERROR. Goto 2.
1d Disk self-formats. Untrue copy or recheck STARTUP procedure.

2a Diskette has DOS files. Goto 3.
2b No DOS files (boot disk). Goto 14.

3a Error type 'SNARK' (more than 2 retries!). Goto 4.
3b Error type 'BLIP-BLIP' (continuous). Goto 8.
3c DOS Menu displayed? Goto 7.

4a Directory readable with DOS. Goto 5c.
4b Directory readable with DISK DOCTOR. Goto 5a.
4c Directory hidden (DOS links present). Goto 5b.
4d Directory unreadable. Goto 6.

5a Directory sectors errored. Write them back with sector editor. Reboot.
5b Search for directory (Scanalyzer will do). Relocate directory to fresh format disk. Goto 5c.
5c Read directory with Disk Doctor and trace individual files--DOS.SYS, AUTORUN.SYS(look at AUTORUN.SYS with sector editor to see next file that loads),etc. Then if data present rewrite it back to sector. If DOS links messed up then goto 15.

6 DIRECTORY RECOVERY: Copy existing track to different disk. Reformat track with ARCHIVER and write

serviceable data back to it. Do directory recovery with DISK DOCTOR. Check programs for proper file-names and rename files for proper operation. Reboot.

7a AUTORUN.SYS present--insert BASIC. Reboot.
7b Trace AUTORUN.SYS. Goto 8.

8 Trace disk to locate errored sector. Write sector data back to errored sector. Reboot.

10a DOS files. Goto 11.
10b Not DOS files (boot disk). Goto 14.

11a Sector read errored, but data present on 1st three sectors. Goto 8.
11b First 3 sectors (boot record) unreadable. Goto 13.

13 Copy first track (sectors 1 through 19) of damaged disk to good disk. Reformat damaged track with ARCHIVER. Rewrite data back to original diskette. Copy the three boot sectors from freshly formatted diskette. If diskette contains unmodified DOS.SYS as first directory entry, then entire first track may be written from good disk. Reboot.

14a Recopy disk from backup.
14b In some cases the entire track can be sector-copied to known good diskette and the original track reformatted with ARCHIVER. Write good data back to original. Writing $EA's (No Operation, NOP) to the entire cleaned sector sometimes will allow the program to run. If the data on the blank sector is part of a graphics display then it probably won't interfere with program operation. Reboot.

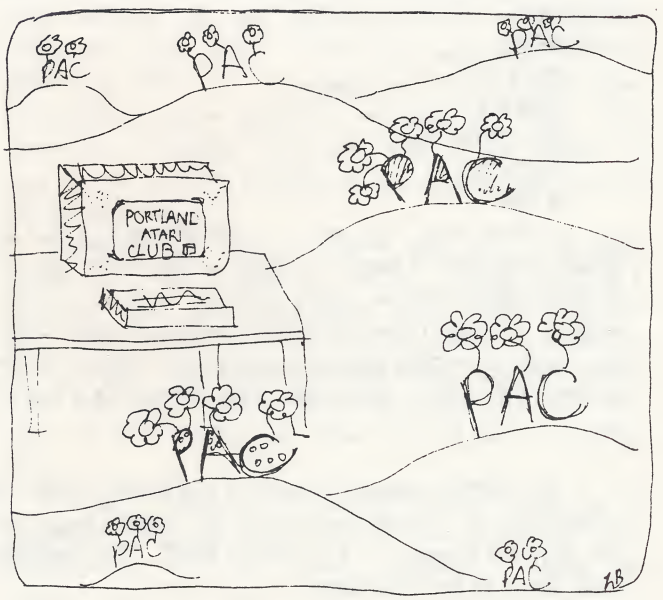
15 DOS LINKS: When a DOS-file disk boots, the three 'BOOT' sectors are read into the drive #1 buffer in the computer. These sectors contain the instructions concerning how the rest of the disk will be loaded and executed. If sector 4 contains the proper data (ie., it is the first sector of DOS.SYS), the computer will load it into memory. If not, then the directory must be searched for DOS.SYS and when located it will be loaded and run. In DOS.SYS are additional commands for what to do next. First, the directory will be searched for AUTORUN.SYS, and if present it will be loaded and run. If no AUTORUN.SYS is found then the cartridge slot will be polled and if a cartridge is present, and it contains disk-booting instructions, the disk will then be booted; otherwise, the cartridge will be initialized and run without further diskette access. If no cartridge is present, DOS will search the directory for DUP.SYS. This file will then be loaded and run. We now will see the DOS menu on the screen.

The last three bytes of each DOS-file sector contain the FILE NUMBER, NEXT-SECTOR number and the BYTES USED NUMBER, respectively.

The left (high) six bits of the FILE NUMBER contain the actual directory entry number from 0 to (decimal 63). The right (low) two bits are for wrap-around of the NEXT-SECTOR byte. Since one byte has a maximum value of $FF (decimal 255) and a single-density diskette contains $2CF (decimal 720) sectors, there are more sectors than one byte can count. Often the files are continuous. In that case you need only look at the file numbers of the previous and following sectors. If they agree then you can safely use that file number on your errored sector.

The NEXT-SECTOR byte will be the save as the current sector number plus 1 (hexadecimal) only if the previous sector's file number and the following sector's file number agree. Otherwise you will have to do a bit of deductive searching to locate the rest of the file. Be sure to increment the file number by one when you wrap-around with the NEXT-SECTOR byte, at $FF (dec 255) and $1FF (dec 511). The NEXT-SECTOR byte will be 00 for the last sector of a file (be sure to decrement the file number if necessary).

The data Byte-counter (last byte of the sector) is usually $7D (dec 125) unless the sector is the last sector of the file or the last sector of a part of an appended file. Try resetting the existing byte counter to $7D. Be sure to write your changes back to the diskette. Reboot.



ST BASIC
Chuck Hall

For those of us who have received ST Basic, and who have been scratching our heads ever since, help is on the way. I would like to use this column to pass on any help I can in using ST Basic and also some programming hints and program samples. If any of you have discovered some nice ways to do something, or uncovered some undocumented uses of the commands, or just found out how to make some of them work, pass the information on to me and we will print it here.

One of the first projects I started on was to write a program to create pages on which to mount stamps. I am also a stamp collector and have been waiting for a machine with the capabilities of the ST to do some really nice things. I won't go into all of the details of the program here, but will highlight a few of the things I did. If you know of a better way to do what I did, then please let me know. I like to learn also.

My basic requirement was to be able to determine how many boxes of variable sizes to print on a page. I then mount a stamp into each box. The approach I took was to define the number of print positions on a piece of paper and then print whatever character I needed in each print position. I would supply the number of rows of stamps, the number of stamps in each row, the vertical and horizontal size of each stamp, plus whatever descriptive text I desired to be printed on the page. I did this through menus which requested the information.

One major problem here. I would like to have the menus appear on a page with no GEM windows or desktop showing. I have tried several things, but so far nothing has worked completely. I finally ended up with the following:

```
CLRSCRN:
  FULLW 2
  CLEARW 2
  POKE CONTRL,3
  VDISYS(1)
  RETURN
```

I have this set up as a subroutine to clear my screen whenever I need to. That is the reason for the RETURN. This routine works fine for most activities, except for when I use the GOTOXY command. At that time, the desktop window lines for the screen show up at the bottom and right hand side. This looks like a bug to me.

The GOTOXY command is used to place your cursor at a specific row, column position on the screen. Much like the POSITION command in 8-bit Atari BASIC. The commands used above do the following:

FULLW 2 - tells the Output window to take up the entire screen.

CLEARW 2 - clears the screen of any previous output.

POKE CONTRL,3 - places the value of 3 into a predefined location of memory referred to as CONTRL(0).

VDISYS(1) - calls the VDI in GEM and refers to the '3' in CONTRL(0) to do a Clear Workstation. The argument in VDISYS(1) is a dummy argument but needs to be there.

With this routine I have drawn circles, colored objects, and all sorts of displays (including text), but as soon as I try to position the cursor using the GOTOXY command, I get those frame lines.

The second routine I used was to allocate an array which would allow me to address each print position on a piece of paper. A normal sheet of paper is 8 1/2" by 11". At ten characters per inch we have 80 characters in a line, and at 6 lines per inch we have 66 lines.

At first I thought I could just do a DIM PAGE$(65,79). I used 65 because I really wanted 0 thru 65 and the same with 79, 0 thru 79 for 80. First of all I did not have enough memory. Later when I got some documentation I discovered why. I ended up using the following routine which works very well.

```
DIM PAGE$(65)
FOR i = 0 to 65
PAGE$(i) = SPACE$(80)
NEXT i
RETURN
```

As before:

DIM PAGE$(65) - allocates me an area called PAGE$ that contains 66 elements.

FOR i = 0 to 65 - initializes a FOR/NEXT loop that will loop 66 times.

PAGE$(i) = SPACE$(80) - sets each element of PAGE$ to 80 spaces.

NEXT i - Loop terminator.

RETURN - Again I set this up as a subroutine, and this passes control back to where I called it.

This routine has now created an array of 66 lines, of 80 spaces each. I can now address each of them individually and place whichever print character I wish in each one of them.

That's enough for now. I hope that some of you will pass on any ideas or routines you have come up with and we can start putting them together to help others. Also, if you have any questions about ST BASIC, I will try to research them and get the answers for you. I am not an expert in BASIC, especially in ST BASIC, but I will try to help those I can. Until next time "Keep It Basic, ST BASIC That Is."

How to Change a Volume Name on the ST520

R. DeLoy Graham

I overheard someone at the last ST SIG meeting ask another member how to change the volume name of a 3 1/5" diskette on the 520ST. Although it is easy to change the name of a file on the disk, the volume name of the disk itself is asked for and saved at format time and cannot be changed later from the desktop. However, with a handy utility provided by James Eli of Clarksville, Tennessee, I have successfully changed existing names as well as added names to disks which were not originally named.

WARNING: Use this information at your own risk, preferably after you have made a temporary backup copy of the disk whose volume name you want to change. This procedure, if done incorrectly, could cause you to lose important files. It is a good idea to practice the procedure on a diskette whose information you can afford to lose.

James Eli has graciously shared with the ST community his NO-FRILLS ST SECTOR EDITOR. Many of you have a copy of it already. If you have experience with a sector editor, then you will learn nothing new from this article, but for those of us who are new to sector editors, I want to describe in detail the process I went through to change the volume name of a diskette.

From the desktop, I selected SECED.PRG which asked me to insert the disk to be edited and to press the return key. After doing this, the program read sector #0 of drive A and displayed on the screen 256 bytes of information in both hexadecimal and ASCII format. (256 bytes is half of the 512 bytes that make up each sector. You must press the O key to toggle between the two halves of each sector.)

I next pressed N to choose a new sector number. I entered 11 and pressed return. Then I pressed R and the program read and displayed the information stored on sector 11. Sector 11 contains the disk directory (the File Allocation Table). The ASCII representation of the directory is partially understandable. You will recognize the names of the files that you have stored on your disk. In the February issue of the PAC Newsletter, Chuck Hall described the layout of this directory. Refer to his article for more technical information. We are interested in the first 12 bytes of each entry. I noted that each entry in the directory begins with a filename (the first eight bytes) and is followed by a filename extension (the next three bytes). The twelfth byte is called the attribute byte. For our purposes, a 00 means a normal file and a 08 means a volume label.

The first disk I worked with already had a label. It was the first entry in the directory and its attribute was 08. To change the name, all I had to do was change the first eleven bytes of that entry. I pressed M to modify the data. The program asked me to enter the number of the byte to be modified. I entered the number of the byte I wanted to change and the program inverted the color of the information stored at that byte. I was given the option to press return and enter a different number, or to enter the new value for the selected byte. I entered 65 as the new value. 65 is the ASCII decimal value of the upper-case letter A. (Even though the value stored in each byte is displayed on the screen in its hexadecimal form, you are asked to enter the decimal representation of the value to be stored.) When I pressed return, the old value was changed to 41, which is the hexadecimal equivalent of decimal 65.

Note that the value had changed in RAM memory, but the data on the diskette had not yet been modified. After making the other changes I wanted to make, I made certain that I was still on sector 11, and then I pressed W to write the information on the screen back to sector 11 on the diskette. The screen turned red and I was given a chance to abort this operation, because this is the operation that can cause the most problems. I pressed Y to cause the data to be written to the disk and then chose Q to quit THE NO-FRILLS ST SECTOR EDITOR program and be returned to the desktop. At the desktop I clicked the mouse button on disk A and moved the cursor to the FILE drop-down menu. I chose SHOW INFO and the new name I had given my disk was printed after DISK LABEL. Now I can have all my disks numbered in sequence for filing purposes.

You will notice that THE NO-FRILLS ST SECTOR EDITOR displays two lines for each entry in the directory. Each line contains sixteen bytes for a total of thirty-two bytes for each entry. The volume name entry has 00's after the 08 byte. Filenames, by contrast, have other information stored beginning with the 23rd byte. This information includes time and date of last change, as well as the starting location of the file on the disk and the size of the file.

Somewhere in the directory you will find empty spaces for new filenames. To add a volume label to a diskette which did not receive one at format time, you can simply add an entry into the directory. I chose the first empty line and entered the bytes that made up the name and then entered 08 in the attribute field. The rest of the thirty-two bytes in the entry I left as 00's.

I must remind you that using a sector editor can be dangerous. One false entry in the File Allocation Table and your disk might be trashed! However, I found the process simple and useful, and I hope you will, too.

Regent Spell
Review
Jim Miller

Even though I do not like Regent Word (I will get into that later), Regent Spell is growing on me. Here is what it does:

You can boot Regent Spell without having to load TOS first. It has its own TOS on disk. When the title screen appears, you insert the diskette containing the document to be checked and press the return key or the mouse button. Then pick you document from a directory by double clicking or press tab for the next disk drive.

Edit window: the misspelled words are highlighted in an edit window along with the previous five lines of text. Being able to see the word in its context is a desirable feature that is missing from Hippospell.

Selection Window: this window lists ten possible spellings for the misspelled word.

If the word is spelled correctly, you simply hit return or click inside the edit window to go to the next suspected word.

If you want another word from the selection window, you press the number along side of that word and it will replace the the misspelled word in the edit window.

If it is misspelled, you type the correct spelling directly into the edit window. Pressing the return or clicking the mouse inside the edit window will replace the highlighted word.

Dictionary: It contains 33,000 words and you can insert up to 3000 words. If you remove TOS from the disk, you can add more than 33,000 words to the disk. You press insert or delete keys to add or delete words from the dictionary. The word currently in the edit window will be the one added or deleted.

Compatibility: I have used Regent Spell with Regent Word, STWriter, and 1st Word, and I did not have any problems. This is not true with Hippospell, which seems to lock up with 1st word and at times with STWriter.

I talked to the people at Regent Software and Regent Word II will be coming in March. It will have Regent Spell included with it for $99.00. It will have added capabilities such as what you see on the screen is what you get on paper. Later when Gem Paint and Gem Draw are here, you will be able to use your work from them in Regent Word II. It will cost $25.00 to upgrade Regent Word to Regent Word II and Regent Word II will need to be upgraded to use Gem Draw and Paint.

I can safely say that I recommend this spelling checker over Hippospell because it is more compatible with word processors and it shows the misspelled words in context.

Lands of Havoc
Review
David Roberts

When you start looking for software for the 520ST, you end up making some observations. The most obvious of them is that the game software isn't cheap. Well, that isn't too bad if you get something innovative and exciting that shows off your machine, but upwards of $35.00 is too much to pay for games that are ported from another system or just plain boring.

I found a piece of software by a company named Microdeal that breaks the high price tradition. MichTron is distributing the software, which is in a MichTron packaging format. They were one of the first game distributers for the 520ST. Now they have the cheapest game for the ST. I bought the game sight unseen because of the cheap price, nice packaging, and the crowd behind the demo 520ST at Computers, Etc. Buying software sight unseen can be a mistake, but I had seen the nice quality of 'Mudpies' by Michtron and figured the game couldn't be too bad. Well, I made a great buy!

The 'Lands of Havoc' is a fine example of quality software. It takes awhile to get used to the program, but it is pretty much self-explanatory. The instruction booklet won't tell you much more than how to get started. The premise of the game is that you are a sort-of-human lizard that is supposed to save the land of HAVEN from a group of DARK LORDS. The game is an action adventure that is controlled by a joystick. It will run on any ST configuration. It has excellent graphics and animation that flaunt the 520ST's "power without the price" concept. It has 2,000 unique screens that boggle the mind. I did not try counting them, but I'll take their word for it. The scenery is vast. If you haven't ever been lost in a maze before, you are almost guaranteed to with this game. I won't begin to tell you all the characters in this game, but there must be over fifty different creatures wandering around. The landscapes consist of thorns, castles, trees, gravestones, crosses, bushes, buildings, deserts, and many more. If you want to see an example of the graphics and summary of the game, look in the January 1986 issue of ANTIC Magazine. They are offering 'Lands of Havoc' through ANTIC Software and have a picture of the game included in their ST catalog and elsewhere in the magazine.

To sum up my view of the game is easy. For the price, it beats most of the competition. The game delivers a nice scenario and does it with excellent graphics. The game has a few bugs in it. For example, sometimes, if you execute a certain combination of moves, the game won't let you die. This minor flaw helped me get a whopping score of 88,830 on the game. I am not complaining! I would recommend this game to anyone who likes to think and also likes semi-fast action. You certainly can't beat the price of $19.95.

Sundog Frozen Legacy
Review
Steve Billings

Sundog Frozen Legacy is a game for the Atari 520ST. It is a conversion by FTL Games originally written for the Apple computers. I have not seen the Apple version so I can't compare them, but I suspect that the 520ST version is much better due to the inferiority of the Apple hardware.

The game is a combination of game types. It has a general similarity to the Ultima type graphic adventure where you sit in a director's chair high overhead and control the action of a small character on the land below. There are 18 planets and 50 cities to explore. It also has elements of an action arcade game when you fly your spaceship and are attacked by pirates. You can fight it out with your laser or cannon if you are dumb enough or experienced enough.

The graphics are sharp and there is a little sound. You control your character's movements with your mouse. The mouse guidance system takes some getting used to. You move a cursor on the screen with the mouse and when you push the left button the little character moves toward the cursor location. This works pretty well except when you leave a building on the surface. When the screen flips from the interior of a building back to the cityscape you can easily lose track of the blip that is you. It can take some cursoring around to find it.

While I am on the subject of gripes I will get my other one out of the way. When you move your character to the edge of the screen, instead of scrolling into another area of the city, the screen jumps a block at a time. This is disorienting and distracting. I would much prefer a smooth scroll, but that is a minor gripe about an otherwise good game.

"What is this game about?" you ask. Well, I will tell you. A time in the future in the days when spaceships ply the hyperspaces, humans are not so lucky as they are today. Many humans are relegated to working in the underground mines and hardly ever see the light of a star. The interplanetary commerce and laws are governed by slimy creatures called Rithans. Fortunately, your human Uncle was a wily trader and was able to make his way in the upper world and amassed quite a fortune traveling between the planets in his spaceship called the Sundog. Uncle passed away and left you his fortune and his spaceship. The bad news is that he also had just signed a contract to provide goods and materials to build a new religious colony and to locate and transport the frozen colonist cryogens to the new colony. Okay, it is a little bizarre sounding, but it's a job.

To keep your Uncle's money and spaceship you must complete his contract. End of instructions. To play this game you have to learn how to make smart trades like your Uncle and learn how to fly around in his spaceship. This is easier said than done. Since you have spent most of your time underground you are not familiar with the nature of life topside. Outside of your spaceship is a detailed city. There are several types of buildings, banks, hardware stores, fast food restaurants, transit stations, trade exchanges and more. You need to learn how to identify them so that you can get what you need.

While you are wandering about the city you may be accosted by a stranger. They may be beggars, or muggers, or drug dealers. If you make them mad, look out. They are often armed and will gladly shoot it out with you. I have not won one of these street battles, so I can't say if it is better to run or fight. So far, my health has been best served by running.

You can also travel about the city and to other cities on the planet with your auxiliary pod. It is like a little car attached to the main ship. It is safer and easier than foot travel. Which brings up another important aspect of the game. Besides having to learn how to survive the city life, you must take care of your own health.

Make sure you get enough rest and plenty to eat. If you neglect your health too long you will die, just as surely as if you were gunned down with a stinger by muggers. Game time runs by especially fast when you are traveling out in the sticks, so you have to check on your condition frequently.

Needless to say, you will not figure this game out in one sitting and you will kill yourself off a number of times before you get a good start. Fortunately, there is a save game feature, so you can save your status before you make a hyperspace jump into a hostile area. Then if you get knocked off you can go back to the previous save. You can only save one position at a time for each character, but you can create more than one character to play with. You can only use one character at a time, but you can try different approaches without erasing the other one.

As you can see, this is a pretty complex game and takes some involvement to get into. If you enjoy this sort of real time graphic adventure this is a good pick. There is no set way to solve this kind of adventure game. Events are fairly random and it is up to you and your wits to survive.

CES - The Adventure Continues
Day 3
Jack Powell - ANTIC

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January 11, 1985. Las Vegas, NV - Wandering the fantastic world of Kerovnia, searching for a way to remove the cursed wrist bracelet, you come upon an old and gnarled tree stump...Press <CR> for more!

> PUT THE POINTY HAT ON THE STUMP.

The pointy hat is on the stump.

> PUT THE TOP HAT IN THE STUMP.

The top hat is in the stump.

> PUT THE GREEN BOTTLE IN THE HAT IN THE STUMP.

The green bottle is in the top hat.

> PUT THE WHISKEY BOTTLE IN THE HAT ON THE STUMP.

The whiskey bottle is in the pointy hat.

>PUT THE METAL KEY IN THE BOTTLE IN THE HAT IN THE STUMP.

The metal key is now inside the green bottle.

>PUT THE KEY IN THE BOTTLE IN THE HAT IN THE STUMP IN THE BOTTLE IN THE HAT ON THE STUMP.

The metal key is now inside the whiskey bottle.

The above dialogue is from The Pawn, a new text-with graphics adventure for the ST created in England by Magnetic Scrolls and distributed in the US by Firebird, Inc. The Pawn may be the most advanced adventure game we have seen.

Adventure fans who take a close look at the way the various objects are juggled above, will realize there's a brand new parser coming their way. And The Pawn is the first illustrated adventure to take full advantage of the ST's graphics potential. The pictures were designed with Neochrome. And they look spectacular.

ANTIC was shown a demonstration of this exciting new game at CES. We estimate the program to be late alpha. The pictures have not yet been condensed for optimum disk storage, and the title screen is on a separate disk. Firebird expects a March release date at a price of $44.95.

The Pawn uses some very sophisticated programming techniques. The title screen alone has the capability of using up to 512 colors simultaneously. When the program begins, you are faced with a full, medium resolution text screen. At the top is a menu bar - but with a difference. The drop-down menus are shaped as ragged scrolls. Anytime during the game, you can grab the top bar with the right mouse button and pull down a full low resolution picture.

That's right. A full, 16-color, low resolution picture, scrolling smoothly over a medium resolution text screen. It acts just like a window shade. At any time, you can scroll the picture, part - or all of the way up to see your words.

The company was deliberately vague regarding the plot of the game. Simply put, you find yourself in the land of Kerovnia with some kind of band about your wrist.

The country is surrounded by a barrier that you cannot pass as long as you wear the wrist band. To leave the game, you must leave the country. And the object of the game - surprisingly enough - is to leave the game.

There are 110 locations and 40 screens. And the parser, as demonstrated above, is very advanced -- particularly in its use of objects. For example, you come upon a rake, a hoe, and a trowel. Checking your inventory, you find you have nothing but the clothes on your back... and that nasty wrist bracelet.

So, you remove your clothes to find that you now have a shirt and jeans. Now, your type: TIE THE TOOLS EXCEPT THE TROWEL TOGETHER USING THE CLOTHES BUT THE JEANS. And the response is: The hoe is now fixed to the rake.

Objects may be referenced by location as well as by name: PUT THE KEYS IN THE BARROW. PUT ALL IN THE BARROW IN THE POCKET. Response: The wooden key is in the pocket. The metal key is in the pocket.

Also, any living character you run into has a character and will talk with you. You can talk to your horse and receive some pretty strange information. Also, here's another example of complex object programming. You see a mat on the ground. You get on your horse, then type: GET MAT. Response: you can't get the mat. ASK THE HORSE TO GET THE MAT. Response: he does. GET THE MAT. Response: you now have it.

Infocom fans will have a ball. The Pawn is designed with several ways of winning. You can be an aggressive adventurer or a passive explorer. There's little likelyhood of a fast death if you're a nice person, but those armchair warriors with a violent bent will find it much more of a challenge to stay alive.

The Pawn has been in the works for over two years. It was originally designed for the Sinclair QL, but quickly swerved in the direction of the Atari ST. The programmers on the project include Anita Sinclair, who designed the front end interface, including the drop-down scrolls; Hugh Steers, creator of the intricate parser; Ken Gordon, who implemented the verb routines and the data handling; Rob Steggles, author of The Pawn scenario; Roddy Pratt, who programmed the low-level routines such as the interrupt handlers for the title screen; and, finally, Jeff Quilley, the artist who created the beautiful, and detailed pictures.

Magnetic Scrolls next project will be another adventure called The Guild of Thieves. Also, Firebird,

Inc., was showing a completed arcader for the 8-bit machines called Chimera.

Chimera, which will retail for $19.95, is a 3-D maze-arcade game with a sci-fi background. It's also a bit of a fantasy/role-playing adventure in that you wander the maze picking up objects which you may or may not need.

The big novelty is artificial speech, which is most obviously noticeable at the end of the game - when you die with a blood-curdling scream.

THE BLACK CAULDRON

Sierra On-Line, which sells the popular King's Quest II, demonstrated The Black Cauldron for the ST. The game is based on the recent Walt Disney feature animation and is similar in structure to King's Quest II. Black Cauldron is expected out in February at a price of $24.95.

Also from Sierra is Donald Duck's Vacation, and ST Onewrite. Donald will be out in March for $24.95. ST OneWrite - an accounting series - is expected in April at approximately $149.95.

ACTIVISION

Activision took a luxurious hotel suite at the Desert Inn to demonstrate their ST support. Of particular interest was their Music Studio, by Audio Light, Inc. (ANTIC has uploaded fifteen demo files from this program in DL6 of the 16-bit library. Type BRO /KEY:AUDIOLIGHT.)

Music Studio will drive the internal sound chip - but to really appreciate its capabilities you should hook it up to a synthesizer through the MIDI port.

The Music Studio is a composition-oriented MIDI product using the standard music notation system. It is not a sequencer product, although it does have rudimentary monophonic MIDI input capability. (In other words, it does not emulate a multi-track tape recorder.)

The program supports 15 different instruments in one song, and 8 different voices simultaneously. It also has very powerful MIDI channel assignment capabilities.

You can instantly replace or temporarily delete any instrument. Limited blocks of music may be delineated and then worked on, with such options as cut and paste.

The Music Studio also has four tracks, each of which control all 15 instruments. There are pop-up windows for such control as redesigning the ADSR (Attack, Delay, Sustain, Release) envelopes of the sound chip. You may add lyrics and print the music on hard copy. You can have a great time with this software.

There's even a "paint box" mode consisting of abstract color patterns, for those with less music training.

The Music Studio is due in February or March at $49.95. Activision also announced there will be an 8-bit Atari version of the program as well.

ANTIC also saw Borrowed Time, an Activision murder mystery graphics adventure set in 1930. You play the role of Sam Harlow. The graphics on this are very nice, and in many cases have some simple animation. An interesting touch is a window of most-used words which can be pointed to by the mouse. You can also pick up and drop objects with the mouse.

ANTIC spoke with Activision's Vice President of Product Development, Kenneth Coleman. He told us Activision was committed to the Atari ST. The immediate releases, he said, would be programs which had been converted from their stronger titles then improved to take advantage of the ST's superior abilities.

But Coleman was looking forward to the succeeding generations of ST products which would be designed specifically for the 68000 processor. And he told us that by next Christmas, Activision would be releasing programs that were conceived and designed totally for the 16-bit machine. Because of the greater memory and speed, he said, increasingly complex simulations were possible.

Coleman also gave us an idea of the kind of effort Activision puts into each product. Every program has a team consisting of a producer, who oversees the entire project; one to two programmers, a graphics artist, a sound/music programmer, a writer, and a concept person.

"When you see the 1987 products," said Coleman, "you will say, 'Wow!'"

AUTO PC BOARD DESIGN

FLASH! - Abacus Software just received, and began demonstrating, a PC Board Designer for the ST. The product - which was generating great interest - was originally developed in Germany for the Sinclair QL, then adapted for the GEM system.

ABACUS considers the product to be mostly suitable for the vertical market. Nevertheless, though there is yet no title or set price for the program, ABACUS has written three-dozen orders in the past two days.

CES - Reflections
Final Day
Jack Powell - ANTIC

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January 12, 1986. Las Vegas, NV. CES and COMDEX - the two largest shows in Las Vegas. How are they the same?

What are the differences? After three days of Atari-specific coverage, it might be interesting to take a broader look at this phenomenon. Many of you reading this have never been there. What's it like?

Only six weeks apart, both CES and COMDEX feature a huge array of electronics, and fill the Vegas hotels and casinos to overflowing. Traffic on the strip grinds to a crawl past the razzle-dazzle neons and long lines of conventioneers waiting for cabs outside every hotel lobby.

The exhibits of both shows are scattered throughout this flat, desert town - filling not only the two enormous convention halls, but several hotels as well. And this does not count the many hospitality suites which pepper the hallways of The MGM Grand, or Caesar's Palace, or the Sahara, or any of the several gaudy and over- decorated monuments to questionable taste.

Beyond this, the similarities end. CES and COMDEX are two very different experiences. COMDEX, the Computer Design Exhibition, is aimed primarily at the high-end business market. The range of products is of a narrower focus - mostly computer-related items, such as monitors, printers, and so on.

The layout and design of exhibits at the two shows reflect their atmosphere. COMDEX booths tend to be done in quiet, tasteful shades of gray and beige. Seldom higher than eye-level, the exhibits are spacious and open. From one end of the COMDEX hall, you can see across to the other.

In contrast, CES is a loud and raucous circus, complementing the glitter and energy of Las Vegas. It is the Consumer Electronics Show, with the emphasis on Consumer.

The architecture of the CES exhibits mirrors the philosophy of the hard sell - each exhibitor trying to outdo the other in size and style. A typical CES exhibit is ten to fifteen feet tall - much of it solid wall. Some exhibits are actually two-stories tall.

Standing in the middle of the Convention Center hall, one is lost in a maze of electronic madness - corridors of equipment leading in all directions. And since each display is so tall, most exhibitors hang immense signs, featuring their company name high over their area.

The range of products at CES is staggering. Anything that is in any way connected with electronics may be found at CES - from miniature TVs to digital watches, to magazines that advertize digital watches.

And the sound! No - rather the NOISE! Every electronic sound-making device available to the buying public is demonstrated at CES. And, of course, if loud is good, LOUDER is better. Every TV, every VCR, every radio, ghetto box, stereo, car sound system, synthesizer, security alarm, computer game - all shout for attention in the echoing accoustics of the cavernous halls.

AUTO AUDIO GAUNTLET

Walking between the Main Convention Hall and the Hilton Hotel (which held further displays) one enters "Car Stereo Row", an outdoor exhibit of the most elaborately-wired vehicles ever to have graced the fantasies of any adolescent would-be playboy.

Each of several vehicles was playing something different - all at contrasting tempos. The only thing they seemed able to agree upon was the decibel level - and the need to overdrive the bass to excess.

A black hearse called "The Terminator" contained speakers powerful enough to reach the last row of Radio City Music Hall. We sat in it just long enough to be certain that a five minute cruise would result in ear bleed.

THE PORNOGRAPHIC BALLROOM

We had all heard of it and just couldn't wait to see it. A major consumer product is video tapes, and tape companies from CBS/Fox to Rhine Records display their wares all over the main hall. But one group of video tape manufacturers was isolated in the Sahara Hotel -- shielding innocent eyes.

The "adult" video-tape exhibitors take up an entire ballroom in the Sahara Hotel. Over 70 exhibitors were displaying one of the more popular products of the burgeoning home video market. We just had to check this out!

And so did a lot of other attendees. Upon reaching the Sahara, we wandered corridors of hotel room exhibits featuring mostly speaker and stereo products. Surprisingly, many of the people we met there were not at all interested in speakers. They were all lost - trying to find the porn tapes exhibit.

Gliding up an escalator from the Sahara casino to THE BALLROOM, we entered the exhibit area, after passing through a dark room with black drapes and flashing lights - a little like visiting Marla the Mermaid Lady at the carnival sideshow.

Once inside, the whole thing was, of course, a letdown. Porn queens (and kings), sat behind counters signing autographs. Booth after booth displayed racks of

videotapes, and counter upon counter overflowed with stacks of gaudy, colorful flyers featuring gaudy, colorful women coated in high- gloss laminate.

In all, the adult video-tape area was pretty tame. Over in the main hall, along "publishers' row" where "legitimate" publications such as Audio Times and Stereo Review had booths, the Penthouse Pet of the Year was signing autographs (just four tables down from the ANTIC booth). And each magazine she inscribed contained fantasies far more revealing than anything displayed in the Sahara ballroom.

GOING HOME

So we board the plane Sunday evening - heading home to San Francisco. We're all glassy-eyed and dragging our carry-ons with dull, machine- like movements.

This last day had been very different. Traffic began to slow down at the booths, and the cacophony of disparate sounds from thousands of amplified display devices was unified into cheering football fans as every radio, TV and stereo system on display was tuned to The Big Game.

Thinking back: CES - what's it like? Sights, sounds, images.

Outside: dry desert air and dry aching sinuses. Inside: dry air- conditioned air, dense with cigarette smoke. (There must be more smokers in Vegas than anywhere in the world!)

Aching, sore feet - a lot of concrete floors and a lot of area to cover.

Miniature TV's - everywhere. In the huge Panasonic exhibit, featuring everything from batteries to ghetto-blasters with built-in CD players, we saw The Pocket Watch - a miniature color TV with a wafer-thin LCD screen. Measuring 7 x 4 x 1 inches, the whole thing weighs 15 ounces. Sign of the future.

Bad food. You can stand in a medium line for over-cooked hotdogs and flat Coke, or a very long line for chicken or hamburger with barbecue sauce. No bean sprouts here.

ATARI GAMES

But it was a another good show for Atari. As at COMDEX, the Atari booths were always packed. This was a CES where Atari had the nerve to display 80 monitors featuring mostly games - and to bring the 7800 video game machine out of limbo. Video games dead? Nonsense.

Most of the software displayed had already made its debut at COMDEX. There were a few exceptions to this, but the two Atari software products that stand out from the rest are the untitled PC board designer from Abacus and the spectacular adventure from Firebird, The Pawn.

CES veterans considered this show to be pretty slow compared to previous years. But most agreed it was a very positive show for business. Little new software, but many successful deals - sign of a turn-around in the computer industry? We think so. Looks like good times ahead.

The Phone Guy
Tom Addis

Here's the picture: You've been trying to get on the PAC board for over two hours. You finally get on and find the file you've been needing to finish off that ram disk modification. At last, you'll have it finished! You're in the middle of downloading it, feeling very happy with yourself, when all of a sudden, all you see on your screen is a bunch of hearts, then you hear your modem start to scream and the telephone rings. You answer the phone in a state of confusion--it's Sears wanting to find out if you want to have your carpets cleaned. You tell them you have no carpets and hang up the phone. You redial the PAC board and all you get is a busy signal.

I tell you this out of experience. The culprit? The call waiting on my telephone. My wife and the service rep at the phone company insisted I get it and it seemed like a real good idea at the time. No more missed phone calls, no more wondering if the phone is off the hook or just busy (if you get a busy, that means either the phone is out of order, off the hook, or being dialed). Like I was saying, this is a great service and a real convenience, until you need to have an uninterrupted line. Then it's a real pain in the attitude.

I'm telling you this not to vent my frustrations. I'm telling you this to set up a reason to tell you the solution. That's right, I have the solution.

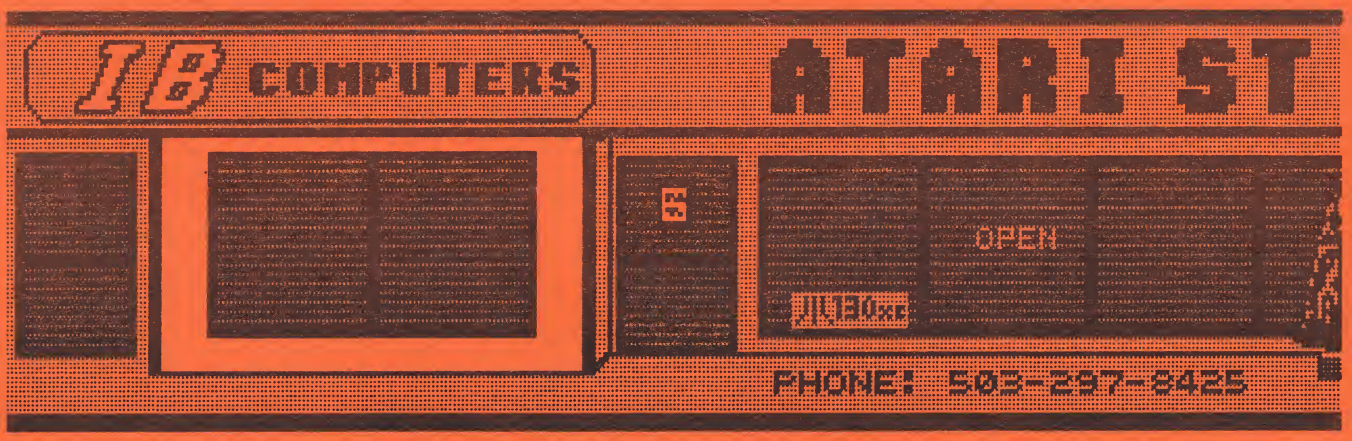
If you have Pacific N.W. Bell's "call waiting" service, all you have to do is dial *, 7 and then a 0, wait for the dial tone to return and dial the number you want. By doing this, you have blocked all custom calling features from your line. When you hang up, everything goes back to normal, so you'll have to do this every time you make a call you don't want interrupted.

At this time, I would like to point out that this does not work on P.N.B.'s "centrex" or "centraflex" services, nor can I say if it will work in General Tel areas.

Well, that's it. If you have any other questions regarding telephone services, leave a message on the P.A.C. board for me and I'll try to get the answers and print them in the newsletter.

See ya next month! -- The Phone Guy

```
0 REM SAVE"D1:MAILMAST.PGM"

10 B=40:DIM NAME$(B),ADDRESS$(B),CITY$(B),STATE$(B),
ZIP$(B),MAILLST$(B)
20 TRAP 40:NUMRECORDS=0:? "}":ROW=5:POSITION ROW,5:?
 "NEW/NEXT LIST => 1":POSITION ROW,7:? "EDIT CURRENT
 LIST => 2"
30 POSITION ROW,9:? "ENTER SELECTION";:INPUT A:IF A=
1 THEN 4000
40 TRAP 1000:RESTORE 9999:READ NUMRECORDS:GOTO 1000

1010 LN=10000:RECORDNUM=0:IF NUMRECORDS=0 THEN 2000

1055 IF A=33 AND NUMRECORDS>10+RECORDNUM THEN LN=LN+
100:RECORDNUM=RECORDNUM+10:? "}":GOTO 1020:REM SPACE
BAR

1070 LN=LN+10*(C-1):RESTORE LN:READ NAME$,ADDRESS$,C
ITY$,STATE$,ZIP$:RECORDNUM=RECORDNUM+(C-1)
1072 IF NAME$="END" THEN 2000

2000 ? "}","NEW ENTRY":? "  PRESS RETURN TO QUIT":RE
CORDNUM=RECORDNUM+1

3000 TRAP 1000:? :? ,"SAVE 'LIST' =>1":? :? ,"PROGRA
M + 'LIST' =>2":? :? ,"ENTER SELECTION ";
3005 INPUT A:ON A GOTO 4200,3010:GOTO 1000
3010 ADDRESS$=":MAILING.LBL":REM CHANGE TO ":WHAT EV
ER YOU WANT"
3020 ? :? "Wish to save ";ADDRESS$(2);" to.. D";:INP
UT NAME$:NAME$(LEN(NAME$)+1)=ADDRESS$
3030 SAVE NAME$
3040 ? :? "Backup Copy to.. D2";:INPUT NAME$:NAME$(L
EN(NAME$)+1)=ADDRESS$
3050 SAVE NAME$
3060 END

4000 ? "}":ROW=5:POSITION ROW,5:? "RETURN TO SKIP":R
EM LOAD MAILING LISTS
4010 POSITION ROW,7:? "LOAD FROM DISK OR CASSETTE";:
INPUT MAILLST$:B=LEN(MAILLST$)+1:MAILLST$(B)=":"
4020 IF (MAILLST$(1,1)<>"D" OR B>3) AND MAILLST$(<>"C
:" THEN 1000
4030 POKE 710,244:IF MAILLST$(1,1)="D" THEN B=B+1:GO
SUB 4080
4040 TRAP 4060:? "}":POSITION 2,5:? "ENTER ";CHR$(34
);MAILLST$;CHR$(34):GOSUB 5030
4050 ? "RECORD ENTERED":POKE 710,194:RESTORE 9999:RE
AD NUMRECORDS:GOTO 4070
4060 ? "INCOMPLETE ENTERING OF RECORD"
4070 ? "PRESS RETURN TO CONTINUE";:INPUT NAME$:POKE
710,148:GOTO 1000
4080 TRAP 4100:NAME$=MAILLST$:NAME$(B)="*.MLB":CLOSE
 #3:OPEN #3,6,0,NAME$:A=0:? "}":D=5:E=2
4090 INPUT #3,NAME$:IF A=15 THEN D=D+20:E=E-A
4092 IF NAME$(2,2)=" " THEN A=A+1:POSITION D,E+A:? A
;".  ";NAME$(3,13):GOTO 4090
4100 TRAP 1000:CLOSE #3:POSITION D,E+A+2:? "ENTER SE
LECTION";:INPUT C
4110 D=8:E=2:IF C>=15 THEN D=D+20:E=E-A
4120 POSITION D,E+C:POKE 764,12:INPUT NAME$:D=1:E=0:
REM GET DESIRED SELECTION
4130 IF NAME$(D+E,D+E)=" " THEN E=E+1:GOTO 4130:REM
REMOVE LEADING BLANK SPACES
4140 IF NAME$(D+E,D+E)<>" " THEN GOSUB 4160:REM REMO
VE BURIED BLANK SPACES
4145 D=D+1:IF D<12 THEN 4140
4150 RETURN
4160 IF D=9 THEN MAILLST$(LEN(MAILLST$)+1)=".":REM I
NSERT "." AT 9th POSITION
4170 MAILLST$(LEN(MAILLST$)+1)=NAME$(D+E,D+E)
4180 POSITION 15,20:? MAILLST$:RETURN

4200 GOSUB 4220:? "}":? "BACKUP COPY":GOSUB 4220:REM
 SAVE MAILING LISTS ONLY
4210 ? :? "PRESS RETURN";:INPUT NAME$:GO TO 20
4220 ? :? "(NOTE: Disc filename must":? "have => '.M
LB' extender)"
4225 ? :? " SAVE TO DISK OR CASSETTE":? :D=PEEK(85):
? " ";MAILLST$;:POKE 85,D:INPUT MAILLST$:REM POS. CU
RSOR
4230 IF (MAILLST$(1,1)<>"D" OR A>3) AND MAILLST$(1,1
)<>"C:" THEN 4270
4240 TRAP 4270:? "}":POSITION 2,5:? "LIST";CHR$(34);
MAILLST$;CHR$(34);",9999,10000+(10*NUMRECORDS)"
4250 ? :GOSUB 5030
4260 ? "FINISHED RECORDING":RETURN
4270 POP :POP :POKE 710,148:? "PROBLEM SAVING DATA T
O ";MAILLST$:? :? "PRESS RETURN";:INPUT NAME$:GOTO 1
000

5025 IF RECORDNUM>NUMRECORDS THEN ? :? LN+10;" DATA
END,END,END,END,END"
5027 IF RECORDNUM>NUMRECORDS THEN ? :? "9999 DATA ";
RECORDNUM:NUMRECORDS=RECORDNUM
```



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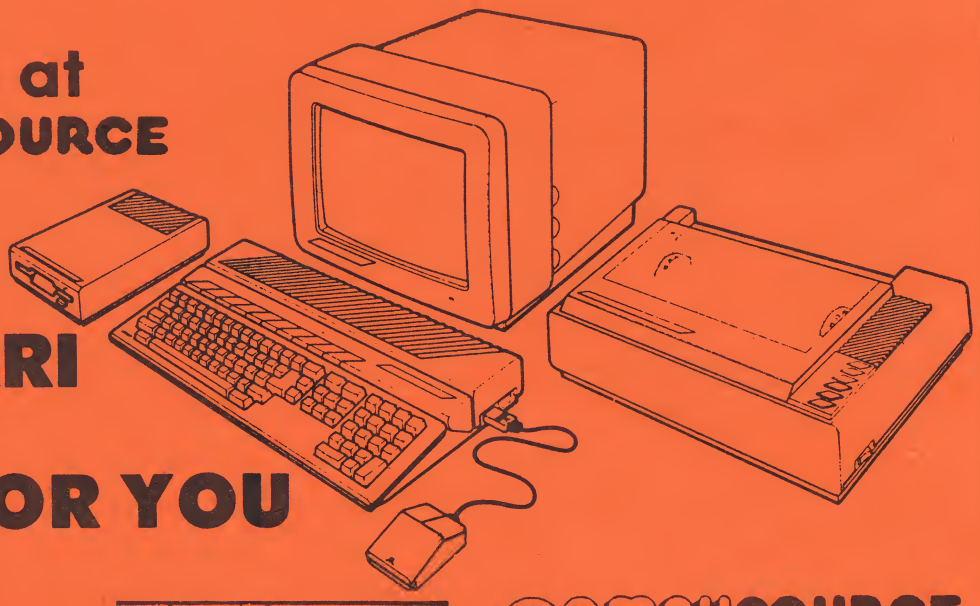

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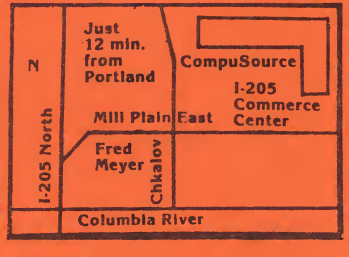

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